ABSTRACT

A frequency detector for use with a PLL utilizes a counter and a preset value to produce frequency information related to a VCO signal. The frequency information is used to control the frequency of the VCO signal and to determine whether the VCO signal should be controlled by the frequency detector or a phase detector. Using the counter and preset value involves establishing a preset value that is used to obtain the desired frequency information. The preset value is set such that the counter is at one-half full-scale at the end of a known time period when the VCO signal is oscillating at a target frequency. When the preset value is set to such a value, the most significant bit of the counter after the known time period indicates whether the frequency of the VCO signal is above or below the target frequency.